

**Abstract of the Disclosure**

A method is provided to decode data encoded by any block code in a manner that substantially improves the error correction capability of the block codes, and that is independent of the encoder. The structure associated with the method desirably allows the testing of those hypotheses that are known to exist, such that one can use the a priori knowledge of the possible set of hypotheses to only search from among them. The method of decoding data is both advantageous and desirable since knowing the subset of the code word space that is being utilized in essence allows the distance between the code words to be increased yielding significant decoding benefits.